

Recent results with novel geometrically weighted Frisch grid CdZnTe detectors demonstrate dramatic improvements in gamma-ray resolution. The devices no longer require signals from hole transport, hence the higher carrier extraction factor values of the electrons can be manipulated while ignoring the difficulties imposed by hole trapping. The device uses the geometric weighting effect, the small pixel effect and the Frisch grid effect to produce high gamma-ray energy resolution. The design is simple and easy to construct. The device performs as a gamma-ray spectrometer without the need for pulse shape rejection or correction, and it requires only one signal output to any commercially available charge sensitive preamplifier. The device operates very well with conventional NIM electronic systems. Presently, room temperature (23°C) energy resolutions of 2.68% FWHM at 662 keV and 2.45% FWHM at 1.332 MeV have been measured with 1 cubic cm CdZnTe devices.